

What is claimed is:

1    1. A probe apparatus for testing a circuit chip, said probe  
2    apparatus comprising a probe group having two or more  
3    probes for independently conductively contacting a  
4    single terminal of said circuit chip.

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1    2. The probe apparatus of claim 1, further comprising  
2    an electronic circuit capable of recognizing a test  
3    path resistance and correspondingly compensating a  
4    voltage drop of an operational signal passing  
5    through at least one of said probes.

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1    3. The probe apparatus of claim 2, wherein said  
2    probe group comprises three probes and said  
3    electronic circuitry is capable of recognizing  
4    a) a first path resistance of said  
5    resistance condition between said first  
6    and said second contacting means along  
7    said single test terminal;  
8    b) a second path resistance of said  
9    resistance condition between said first  
10   and said third contacting means along  
11   said single test terminal;  
12   c) a third path resistance of said  
13   resistance condition between said second  
14   and said third contacting means along  
15   said single test terminal; and  
16   wherein said electronic circuitry is capable  
17   of compensating said voltage drop  
18   individually and in correspondence to one,

19                   two or three operational signal paths  
20                   related to said probes.

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- 1       4. The probe apparatus of claim 2, wherein said  
2                   probe group comprises four probes and said  
3                   electronic circuitry is capable of recognizing  
4                   said test path resistance according to 4-Wire  
5                   Ohm's Measurement.
- 6
- 1       5. The probe apparatus of claim 1, wherein at least  
2                   one of said two or more probes is a buckling beam.
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- 1       6. The probe apparatus of claim 1, wherein said probe  
2                   group is bundled in a single perforation of a  
3                   sheath being part of said probe apparatus.
- 4
- 1       7. The probe apparatus of claim 6, wherein said  
2                   single perforation is a long hole.
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- 1       8. The probe apparatus of claim 6, wherein said  
2                   single perforation is a circular hole.
- 3
- 1       9. The probe apparatus of claim 1, wherein said two or  
2                   more probes have probe tips essentially  
3                   concentrically arranged in correspondence to a  
4                   rotation axis of said single terminal having a  
5                   rotationally symmetric and non planar contact  
6                   surface such that said two or more probes contact  
7                   said single terminal in a self centering fashion.
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- 1       10. The probe apparatus of claim 9, wherein said  
2                   probe tips are essentially spherical.

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1 11. A method for compensating a voltage drop of an  
2 operational signal passing through an operational  
3 signal path having a constant resistance and a  
4 variable resistance related to a contact quality of a  
5 probe and a terminal of said operational signal path,  
6 said method comprising the steps of:

- 7 a) contacting said terminal with a group of two or  
8 more of said probes;  
9 b) recognizing a path resistance along said probes of  
10 said group, said terminal and interfaces between  
11 said probes and said terminal;  
12 c) deriving an operational signal path resistance from  
13 said path resistance; and  
14 d) compensating said voltage drop in correspondence to  
15 said operational signal path resistance.

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1 12. The method of claim 5, wherein said contacting is  
2 provided by said group including a first, a  
3 second and a third of said probes, wherein said  
4 recognizing includes recognizing a first, second  
5 and a third path resistance corresponding to said  
6 first, second and said third of said probes, and  
7 wherein said deriving includes deriving an  
8 absolute value of a first, second and third  
9 operational signal path resistance corresponding  
10 to said first, second and said third path  
11 resistance.